

ZAPADNYUK, V.I.; ZAKHARIYA, Ye.I.

Desensitizing effects of rhodanine derivatives. Farm. i toks.
24 no.1:33-36 Ja-F '61. (MIRA 14:5)

1. Kafedra farmakologii (zav. - prof. A.A.Gavrilyuk) i kafedra
patologicheskoy fiziologii (zav. - prof. I.I.Fedorov) L'vovskogo
gosudarstvennogo meditsinskogo instituta.
(THIAZOLES RHODANINE) (ALLERGY)

ZAKHARIYA, Ye.A.; ZAPADNYUK, V.I. (Lvov)

Spasmolytic effect of novocaine. Pat. fiziol. i eksp. terap. 3 no.3:
77 My-Je '59. (MIRA 12:7)

1. Iz kafedry patofiziologii (zav. - prof. I.I. Fedorov) i kafedry farmakologii (zav. - prof. A.A. Gavrilyuk) Lvovskogo meditsinskogo instituta.

(PROCAINE, eff.
on exper. convulsions (Rus))
(CONVULSIONS, exper.
eff. of procaine (Rus))

ZAKHARTYA, Ye. A.

"The Effect of Strong Stimulation and Parabiotic Inhibition on the Emergence and Course of Inflammation (Experimental Investigation)." Cand Med Sci, L'vov State Medical Inst, L'vov, 1953. (RZhMed, No 4, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

ZAKHARIYA, Ye.A.; FEDOROV, I.I.

Disintoxicating effect of sodium lactate in poisoning with narcotics.
Vrach.delo no.2871-75 F 163. (MIRA 16:5)

I. Kafedra patologicheskoy fiziologii (zav. - prof. I.I. Fedorov)
Lvovskogo meditsinskogo instituta.
(NARCOTICS) (SODIUM LACTATE)

ZAKHARIYA, Ya.A.; ZAPADNYUK, V.I.

Reproduction of audiogenic convulsions after the preliminary administration of pyramidone to animals. Biul. eter. sci. i med. 58 no.8:82-84. Apr. '64. (USSR 18 3)

1. Kafedra patologicheskoy fiziologii (zav. - detsent V.P. Bezuglov) i kafedra farmakologii (zav. - prof. A.A. Gavril'yuk) L'vovskogo meditsinskogo instituta. Submitted April 10, 1962.

ZAKHARIYA, Ye.A.

Method of inducing audiogenic convulsions. Pat. fiziol. i
eksp. terap. 9 no.3:78-79 My-Je '65. (MIRA 18:9)

1. Kafedra patologicheskoy fiziologii (zav.- dotsent V.P.
Bezuglov) L'vovskogo meditsinskogo instituta.

ZAPADNYUK, Ignatiy Pavlovich, prof.; ZAPADNYIK, Vitaliy Ignat'yevich,
kand. med. nauk; ZAKHARIYA, Yekaterina Andreyevna, kand.
med. nauk; FEDOROV, I.I., prof., doktor med. nauk, red.;
ZAPOL'SKAYA, A.A., tekhn. red.

[Laboratory animals, their breeding, keeping, and use in
experiments] Laboratornye zhivotnye, ikh razvedenie, soder-
zhanie i ispol'zovanie v eksperimente; s predislovием i pod
red. I.I.Fedorova. Kiev, Gosmedizdat USSR, 1962. 349 p.
(MIRA 16:7)

(LABORATORY ANIMALS)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

ZAKHARIYEV, B., kand.med. nauk (Sofiya)

Treatment of psoriasis. Vest. derm. i ven. 37 no. 10:76-77
(MIRA 17:9)
0 '63.

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

WILHELM, V. T., GREGORY, A. J., ZAHN, P. C.

Capacity, indicated for radioactive salt solution, about 1/2
pint, 1000 ml. 31 Je 11.

ABRASHEV, G.P.; RADEV, R.I.; TSENKOV, TS.G.; DIMOV, N.D.; ZAKHARIYEV, I.TS.;
PENCHEV, S.P.; TSONEV, M.D.; SHAVEL'SKIY, G.A.

Crude oil of the Dolni Dubnik field. Khim'i tekhn.topl.i masel 8
no.11:24-30 N '63. (MIRA 16:12)

ZAKHARIYEV, N.; BAKRACHEV, N.; POPOV, I. (Bulgariya)

Acute poisoning by explosion gases. Gig. truda i prof. zab.
4 no.12:45-47 D '60. (MIR 15:3)

1. Dimitrovskaya bol'nitsa dlya shakhterov.
(MINE GASES—TOXICOLOGY)
(ELASTIC—HYGIENIC ASPECTS)

GEGUCHADZE, R.A.; ZAKHARIYEV, A.I.

Making coke briquets from weakly caking lean Bulgarian coal.
Trudy IOI 20:155-158 '63. (MIRA 17:8)

ZAKHARIYEV, V.I.; GODEV, N.G.

Numerical scheme of a forecast by a two-level model of the atmosphere on the basis of the solution of the complete system of hydrothermodynamic equations. Trudy MMTS no.6:25-32 '65. (MIRA 18:12)

MILENKOV, Kh.R.; KIRIN, I.; AGOPYAN, K.; ZAKHARIYEVA, Z.

Influence of hemp dust on some body functions. Gig. i san. 26 no. 4:
25-32 Ap '61. (MIRA 15:5)

1. Iz kafedr patologicheskoy anatomii, patologicheskoy fiziologii
i fiziologii Meditsinskogo instituta imeni I.P.Pavlova, Plovdiv,
Bulgariya.

(HEMP...PHYSIOLOGICAL EFFECT)

ZAKHARIEVA, M. [Zakharieva, M.K.], d-r; SOLOMONOVA, K.

Standardization of the tetanus anatoxin. Pt. 1. Trudy epidemiol
mikrobiol 8:83-89 '61 [publ. '62].

1. Chlen Redaktsionnoy kollegii, "Trudy Nauchno-issledovatel's-
kogo instituta epidemiologii i mikrobiologii" (for Zakharieva).

DAVITASHVILI, L.Sh., akademik; ZAKHARIYEVA-KOVACHEVA, Kr.

Origin of the "Stone Forest" near Varna, Bulgaria. Soob. All Gruz.
SSR 30 no.4:441-446 Ap '63. (MIRA 17:9)

1. Institut paleobiologii AN GruzSSR, Tbilisi. 2. Akademiya
nauk Gruzinskoy SSR (for Davitashvili).

DAVITASHVILI, L.Sh., prof.; ZAKHARIYEVA-KOVACHEVA, K.R.

Mystery of a "stone forest" in Bulgaria. Priroda 52 no.9:
90-91 '63. (MIRA 16:11)

1. Institut paleobiologii AN GruzSSR (for Davitashvili).
2. Sofiyskiy gosudarstvennyy universitet, kafedra paleontologii
(for Zakhariyeva-Kovacheva).

ZAKHARTYEV - KOVACHEVA, Kr.

One more "petrified forest" in the People's Republic of Bulgaria.
Soob. AN Gruz. SSR 36 no.1:123-126 0 '64.

(MIRA 18:3)

I. Sofiyskiy gosudaratvennyy universitet, Bolgariya. Submitted
July 10, 1964.

ZAKHARIYEVA-KOVACHEVA, Kr.

Second "stone forest" of Bulgaria. Priroda 53 no.10:
114-115 '64. (MIRA 17:11)

1. Sofiyskiy universitet, Bolgariya.

ZAKHARKEVICH, I.P.; BELEN'KIV, A. Yu.

Mondor's disease in general furunculosis and axillary hidradenitis. Zdrav. Bel. 9 no.7:85 J1:63 (MIRA 17:4)

1. Iz Kostyukovichskoy rayonnoy bol'nitsy (glavnnyy vrach V.K. Polevtsov).

ACC NR: AP6036102

SOURCE CODE: UR/0256/66/000/011/0067/0070

AUTHOR: Zakharkin, D. F. (Engineer, Lt. Col.)

ORG: none

TITLE: Amplitude velocity curve of a moving target selector

SOURCE: Vestnik protivovozhushnoy oborony, no. 11, 1966, 67-70

TOPIC TAGS: radar signal, moving target, radar tracking, computer application

ABSTRACT: Method of differentiation between radar signals reflected by stationary and moving targets is being discussed under the conditions which occur when the two coincide. Such a situation arises in the case of "blind velocities," i.e., such radial velocities of moving targets with respect to the receiving stations at which the reflected signals are in constant phase relationships and, therefore, are suppressed by the computer of the moving target selector in the same manner as the signals reflected by stationary targets. The MTS amplitude-velocity curves are useful in mathematical calculations leading to the isolation of the signals derived from MTS. In order to eliminate the "blind velocities" within a sufficiently wide range of Doppler frequencies a multiple sequential reading of the received signals is employed simultaneously with the alternating frequency of the sounding radar impulses. In this manner the first segment of the amplitude-velocity curve, which corresponds to the spectrum of the Doppler frequency of the interference, is sufficiently steep,

Card 1/2

ACC NR: AP6036102

and the operational range of the target's velocities is sufficiently wide to minimize the effect of "blind velocities." Orig. art. has: 5 formulas and 4 figures.

SUB CODE: ~~02~~ 17 ~~12~~ / SUBM DATE: none

Card 2/2

ZAKHARKIN, D.F., zh.-meyer

Moving target selection apparatus in radar stations; material
from foreign literature. Vest. protivovozd. obor. no.2:24-26 P
'61. (MIRA 14:2)

(Radar)

TEREMINA, Nadezhda Vasil'yevna, nauchnyy sotrudnik; ZAKHARKIN, F.G.,
red.; KAYDALOVA, N.D., tekhn.red.

[Golden corn] Eukurusa zolotaia. Khabarovsk, Khabarovskoe
knizhnoe izd-vo, 1959. 27 p. (MIRA 14:12)

1. Birobidzhanskaya sel'skokhozyaystvennaya optychnaya stantsiya
(for Teremina).
(Corn (Maize))

1. ZAKHARKIN, I.
2. USSR (600)
4. Concrete Construction
7. Mechanized preparation of concrete, Eng. Mast.ugl. 2 no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

ZAKHARKIN, L., I.,

USSR/Chemistry - Pharmaceuticals
Medicine - Amoebic Dysentery

Dec 50

1/2. 173T23

"New Synthesis of the Alkaloid Emetine," R. P. Yevstigneyeva, R. S. Livshits, L. I. Zakharin, M. S. Baynova, N. A. Preobrazhenskiy

"Dok Ak Nauk SSR" Vol. LXXV, no 4, pp 539-542

In addn to being specific remedy against amoebic dysentery, emetine is effective against Trematodes and some bacteria which produce serious diseases in man and animals. Most probable formula for emetine, advanced by authors, corresponds to R. Robinson's formula based on theory of physiological conditions ("Nature," Vol CLKII, No 524, 155, 1943.) Formula has now been confirmed by authors, who carried out complete synthesis of racemic emetine in several different ways. Two reaction schemes illustrate authors' complete synthesis.

Pa. 173T23

ZAKHARKIN, L. I.

"Synthetic Investigations in the Field of the
Alkaloid Emetine." Thesis for degree of Cand.
Chemical Sci. Sub 3 Apr 50, Moscow Inst of Fine
Chemical Technology imeni (M.V.) Lomonosov

Summary 71, 4 Sep 52, Dissertations Presented
for Degrees in Science and Engineering in Moscow
in 1950. From Vechernyaya Moskva, Jan-Dec 1950

BLACKMARKET - 1

Chem Abs v48

1-25-84

Organic Chemistry

Chem

①

Bromotrifluoromethane. L. I. Zakharkin. Acad. Nauk
USSR Akad. Nauk. Org. Khim. Sintez Org. Soedinenii. Sbor.
tr. 2, 14-19 (1952); cf. Kharash, et al., C.A. 43, 3315a.
Passage of a mixt. of 600 g. Br and 700 g. CHCl₃ through a
tube packed with broken glass and heated to 420-50° with a
recycling of this material b. under 75° until all Br is utilized
(2-3 passes) give after washing with 10% Na₂CO₃, 80-85%
CBrCl₃, b. 102-4°, n_D 1.5032, d₄ 1.8942. G. M. K.

68/5d
BW

ZAKHARIN, L. I.

Chemical Abst.
Vol. 76 No. 5
Mar. 19, 1954
Organic Chemistry

Isoquinoline compounds. V. Synthesis of the natural
alkaloid, emetine. B. P. Evstigneeva, R. S. Livshits,
A. S. Bilyova, L. I. Zakharkin and N. A. Preobrazhenskaya
(Moscow Univ. The Chem. Technol. J. Russ. Chem.
U.S.S.R. 22, 1611-16 (1952) (Engl. Translation) - See C.A.
47, 6949c.

(6)

14
1-2-1-51

ZAKHARKIN, L.I.; PREOBRAZHENSKIY, N.A.

Isoquinoline compound series. VI. Synthesis of β -[1-(bromomethyl)propyl] glutaric acid and β -[1-hydroxymethyl]propyl]glutaric acid lactone. Zhur. Obshchey Khim. 22, 1890-5 '52. (MLRA 5:11)
(CA 47 no.15:7507 '53)

1. M.V. Lomonosov Fine Chem. Tech.Inst., Moscow.

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

ZAKHARKIN, L. I.

"Isoquinoline compounds. Part 8. Condensation of a' -substituted B -propylglutaric acids with homoveratrylamine". Zakharkin, L. I. and Preobrazhenskii, N. A. (p. 153)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii). 1953, Volume 23, No. 1.

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

USSR / Chemistry organic chemistry

Author : Nasibyanov, A. N., Zakharkin, L. I., Rost, V. N., and Freymina, N. N.

TRANSLATION ACBRI, 02-1953. 100% of the original document is legible.

Submitted : August 23, 1953

USSR / 1954

beta-alkoxy- α , β , β , β -tetrachloro-

Periodical : Dokl. AN SSSR, 97, Ed. 1, 91 - 94, July 1954

Abstract : The reaction leading to the conversion of tetrachloro-alkoxypropanes

Institution : Acad. of Sc. USSR, Institute of Elementary-Organic Compounds

Submitted : May 12, 1954

USSR/chemistry - allyl regrouping

Card 1/1 Pub. 22 - 30/56

Authors : Neimayev, A. N., Academician; Freydina, R. Kh.; and Zakharkin, L. I.

Title : Regrouping of allyl groups in 1,3-dichloropropene-1,3-dichloro-1,3-butadiene and allyl acids

Periodical : Dok. Akad. Nauk SSSR 99/5, 781-783, Dec 11, 1954

Abstract : Another example of allyl regrouping in a dichloropropene system is presented. The conversion of 1,3-dichloro-1,3-butadiene-1,3-dichloropropene-1,3-dichloro-1,3-butadiene and allyl acids to their isomers in an acetic acid solution in the

Institution : Academy of Sciences USSR, Institute of Elementary Organic Compounds

Submitted : October 1, 1974

ZAKHARKIN, L. I.

USSR Chemistry - Synthesis

Card 1/2 Pub. 40 - 6/27

Authors : Asukyanov, A. H.; Zakharin, L. I. I. and Freyolina, R. M.

Author1 : Asukyanov, A. H.; Zakharin, L. I. I. and Freyolina, R. M.

periodical : Izv. AN SSSR. Otd. chis. nauk., 40-47, Jan-Feb 1955

Chemical reaction of $\text{CCl}_2(\text{CH}_2)_3\text{COOH}$ and CCl_2

Language : Russian

Submitted : March 31, 1954

Card 2/2

Pub. No - 6/27

Periodical : Izv. Akad. Nauk SSSR, Otd. Khim. Nauk 1, 40-47, Jan-Feb 1955

Abstract : It is shown that γ_1 dichlorovinylacetic acid has a higher dissociation constant than γ_1 , γ_2 trichlorobutyric acid. The effects of the CCl_3 and CF_3 groups in higher ω , ω , ω -trihalide carboxylic acids on the dissociation constants are described. Eleven references: 5 USA, 4 USSR and 2 German (1901-1954).

1954/

Card

Authors : Kostyukov, A. N., and Lakhnatin, I. I.

Title : Chemical properties of chloro carboxylic acids and some of their conversion

Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 224 - 232, Mar-Apr 1954

Abstract : The reactivity of numerous omega-chlorocarboxylic acids was investigated. The products obtained from the hydrolysis of tetrachloroalkanes, which were formed during the reaction of ethylene with carbon tetrachloride, are described. A thorough study of reaction of omega-chlorocarboxylic acids showed that these acids could successively substitute for the homologous bromo acids. Fifteen references: 7 USA, 1 USSR, 3 French, 3 German and 1 Dutch (1894-1954).

Institution : Acad. of Sc., USSR, Inst. of Organoelemental Compounds

Submitted : April 20, 1954

Zakharkin

Chu

Action of organoaluminum compounds on *o*-esters of chloropropiolic aldehydes. Synthesis of acetals of *o*,*o*-acetyl-*o*-esters of chloropropiolic aldehydes. L. I. Zakharkin (Inst. Polimern. Kompl. o. Akad. Nauk SSSR) 105, 108 (1963). To Et_2O (from 21 g. Na and 250 ml. Et_2O) was added 160 g. 1,1,3-trichloro-3-ethoxy-1-propene and after 10 min. 65 g. powd. KCH_3 added and the mixt. heated 1.5 hrs. After an. treatment and extn. with Et_2O there was obtained 62% $\text{CIC}(\text{CCH}(\text{OBu})_2)_2$, δ_1 83.6°, δ_2 143.07, δ_3 1.0300 and 35 g. $\text{CICH}_2\text{CH}(\text{CH}(\text{OBu})_2)_2$. The former gave 2,4-dinitrophenylhydrazone, δ_1 127-7.8°. Prep. similarly was 58% $\text{CIC}(\text{CCH}(\text{OBu})_2)_2$, δ_1 109.5°, 10.5°, 1.4430, 0.0320. These were treated with RMgX yielding the corresponding $\text{RC}(\text{CCH}(\text{OBu})_2)_2$ in 40-70% yields (R , δ_1 (ppm, d, given resp.): Pr , Et , δ_1 79-80°, 1.4338, 0.8168; iso-Pr , Et , δ_1 73-5°, 1.4321, 0.8062; Bu , 1.4338, 0.8168; iso-Bu , Et , δ_1 91-2°, 1.4397, 0.8768; CH_2 , Et , δ_1 123-4°, 1.4395, 0.8760; $\text{C}_6\text{H}_5\text{CH}_2\text{Bu}$, δ_1 150-8°, 1.4453, 0.8453; $\text{C}_6\text{H}_5\text{CH}_2\text{Et}$, δ_1 158-60°, 1.4419, 0.8068; Ph , Et , δ_1 116-7°, 1.5211, 0.0930; Ph , Bu , δ_1 123-8°, 1.5055, 0.0540; $\text{C}_6\text{H}_5\text{CH}_2\text{Bu}$, δ_1 178-9°, 1.5510, 0.0105. Heating 21 g. $\text{CIC}(\text{CCH}(\text{OBu})_2)_2$ with 5 g. powd. Na in Et_2O followed by treatment with 17 g. MgSO_4 gave 75% tetraldehyde di- Et_2O ester, δ_1 97.5-11°, 1.4339, 0.5830. The reaction mix. from 5 g. Na and 16.2 g. $\text{CIC}(\text{CCH}(\text{OBu})_2)_2$ in Et_2O was treated with 10.5 g. cyclohexanone; after 0.5 hr. heating and quenching in H_2O there was obtained 80% 1,4-dihydro-1,4-dimethyl-2,5-dihydro-4- Et_2O ester.

ZAKHARKIN, L. I.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 800

Author: Nesmeyanov, A. N., Freydlina, R. Kh., and Zakharkin, L. I.

Institution: None

Title: The Investigation of the Reactions of Polychlorohydrocarbons and Related Compounds

Original
Periodical: Uspekhi khimii, 1956, Vol 25, No 6, 665-704

Abstract: A detailed survey with a bibliography of 93 titles.

Card 1/1

Zakharkin, L. I.

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

Author : Nesmeyanov, A.N., Freydlina, R.Kh., Zakharkin, L.I.,
Belyavskiy, A.B.

Title : Action of Nucleophilic Substances on Compounds of the
Structure $CCl - CH = CRR'$.

Orig Pub : Zh. obshchey khimii, 1956, 26, No 4, 1070-1082

Abstract : By dehydrobromination of 1,1,1-trichloro-3-bromobutane
(I), 1,1,1-trichloro-3-bromo-3-phenylpropane (II), 1,1,
1-trichloro-3-bromo-3-methylbutane (III) and 1,1,1-tri-
chloro-3-bromo-4, 4-dimethylbutane (IV) (synthesized by
addition of $CBrCl_3$ to the corresponding olefins) were
prepared, respectively: 1,1,1-trichlorobutene-2 (V),
1,1,1-trichloro-3-phenylpropene-2 (VI), 1,1,1-trichloro-
3-methylbutene-2 (VII) and 1,1,1-trichloro-4,4-dimethyl-
pentene-2 (VIII). Structure of VI was confirmed by

Card 1/14

-3 -

USSR/Organic Chemistry - Theoretical and General Questions
in Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

which is attributed to spatial hindrances. In an alcoholic medium $(C_2H_5)_2NH$ reacts with V and VI to form mixtures of alkoxy- and amino-derivatives, while with VII and VIII only alkoxy-derivatives are formed. With $(C_2H_5)_2NH$ alone, without alcohol, V and VI form amino-derivatives, while VII does not react even at 110° . On action of NH_3 and piperidine (X), in an alcoholic medium, VII forms a small amount of amino-derivatives. The same course of the reaction has been ascertained on interaction of V, VI and VII with Na_2S in alcoholic medium: V and VI form mixtures of O- and S-derivatives, while VII yields only O-derivatives. The authors draw the conclusion that the reactivity of the investigated compounds depends to a large extent upon the nature of the substituents at the center of action of the NP. With decrease of the electrophilic nature (EP) of the compound under

- 5 -

Card 3/14

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Recherat Zhur - Khimiya, No 2, 1957, 4228

study (V > VI > VIII > VII) the rate of alkylation at the O-atom increases and that at the N- or the S-atom decreases. From previous work, (see above-cited reference), it follows that EP of 1,1,1-trichloropropene is greater than that of V. An analogy is traced between the reactions under study and the alkylation of metal derivatives of tautomeric systems, taking place with transfer of the reaction center. In the former case, there is alkylated a mixture of two substances comprising different centers of EP attack, and in the latter case both these centers are bound into a σ system of π -conjugation (keto-enolic, lactim-lactamic). It is shown that V, VI and VII react with C_6H_6 in the presence of $AlCl_3$, to form, respectively, 1,1-dichloro-3-phenylbutene-1 (XII), 1,1-dichloro-3,3-diphenylpropene-1 (XIII) and 1,1-dichloro-3-methyl-3-phenylbutene-1 (XIV). It was found that

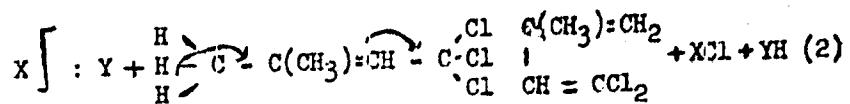
Card 4/14

- 6 -

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228



the NP-reagent on C^1 , π^1 , σ^1 -conjugated system (see scheme 2). High yield of XV from X and its low yield from VII are indicative of the fact that VII reacts with NP-reagents in accordance with scheme (1) without any isomerization. Noted is the similarity in behavior of the C_6H_5 -group of VI and of $C_6H_5CCl_3$ (hydrolysis by 90% CH_3COOH , disproportionation with formation of $ClCH_2CCl$ on heating with $ClCH_2COOH$). There is proposed a new scheme (cf., Kharacch, J. Amer. Chem. Soc., 1947, 67, 1100, 1105), of alkaline hydrolysis of the products of addition of $CFrCl_3$ to olefins:

Card 6/14

- 8 -

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

64%, BP 91-92°/1 mm, $n^{20}\text{D}$ 1.5710, d_4^{20} 1.3217. On hydrobromination with alkali in $\text{C}_2\text{H}_5\text{OH}$ VI reacts with alcohol. 153 g III in 50 ml alcohol treated with 45 g KOH in 180 g alcohol (0°) to get XV, yield 3.5 g, BP 30-31°/8 mm, $n^{20}\text{D}$ 1.5027, and VII, yield 60.5%, BP 45-46°/8 mm, $n^{20}\text{D}$ 1.4822, d_4^{20} 1.2497. From 63 g XVI and 47 g KOH in 150 ml CH_3CH (15-20°, 1 day) are obtained XV, yield 5.1 g, and XVII, yield 71%, BP 51-52°/10 mm, $n^{20}\text{D}$ 1.4628, d_4^{20} 1.1418. In the same manner from 50 g XVI, 35 g KOH and 100 ml $\text{C}_2\text{H}_5\text{OH}$ are obtained 12 g XV and XVIII, yield 14 g, BP 72-73°/24 mm, $n^{20}\text{D}$ 1.4616, d_4^{20} 1.1101. 17 g XVII and $\text{C}_2\text{H}_5\text{ONa}$ (from 6 g Na) in 80 ml absolute alcohol boiled 10 hours, added 8 g KOH in 10 ml water and boiled 6 hours, to get $(\text{CH}_3)_2\text{C}=\text{CHCOOH}$, yield 4.2 g, MP 69-70° (from water). Into 39.5 g XVII HCl (gas) is passed for 2.5 hours, stratified liquid is poured into HCl, bottom layer is separated,

- 10 -

Card 8/14

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

and therefrom is obtained X, yield 30.1 g, BP 58-58.5° /15 mm, n_{20}^{20} 1.4847, d_4^{20} 1.2527. X is also obtained by passing HCl (gas) (-5 to -7°, 3 hours) into 14 g XV in presence of 1 g ZnCl₂, yield 52%, BP 64°/25 mm. From 25 g 4,4-dimethylbutene-1, 60 g CBrCl₃ and 1 g of cinnitrile of azo-bis-isobutyric acid (autoclave, 100-105°, 6 hours) is obtained IV, yield 38 g, BP 90°/5 mm, n_{20}^{20} 1.5030, d_4^{20} 1.4792. From 0.11 mole IV and 0.33 mole (C₂H₅)₂NH (~100°, 18 hours) is synthesized VIII, yield 70%, BP 64-65°/10 mm, n_{20}^{20} 1.4725, d_4^{20} 1.1403. Ozonation of VIII yields the chloral. From 35.6 g V and CH₃ONa (from 4.98 g Na in 50 ml CH₃CH) is obtained 1,1-dichloro-3-methoxybutene-1 (~100°, 2.5 hours) 1,1-dichloro-3-methoxybutene-1 (XX), yield 50%, BP 64°/57 mm, n_{20}^{20} 1.4580, d_4^{20} 1.1722. 15.9 g V and 18.3 g (C₂H₅)₂NH (boiled 8 hours) form 1,1-dichloro-3-diethylamino-butene-1 (XXI), yield 50%.

- 11 -

Card 9/14

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

BP 79.5-80°/14 mm, n^{20}_{D} 1.4690, d_4^{20} 1.0470; hydrochloride, MP 167.5°. Same amounts of V and $(C_2H_5)_2NH$ heated in 40 ml CH_3OH , which gives 30% XXI and XX, BP 40-41°/15 mm. From 32 g V, 32.8 g CH_3COONa and 0.5 g KI, in 50 g CH_3COOH (~ 100°, 18 hours) is obtained 1,1-dichloro-3-acetoxybutene-1 (XXII), yield 59%, BP 83-84°/26 mm, n^{20}_{D} 1.4590, d_4^{20} 1.2234. Structure of XXII is established by converting it by the action of alcohol into XIX, BP 63°/6 mm (in the paper: 1,1-dichloro-3-hydroxybutene-2). Heating of 30 g V and 29 g $Na_2S \cdot 9H_2O$ in 80 ml alcohol and 10 ml water (~ 100°, 6 hours) gives bis-(1,1-dichloro-3-methylpropene-1-yl)-sulfide, yield 40%, BP 104°/5 mm, n^{20}_{D} 1.5345, d_4^{20} 1.3156, and 1,1-dichloro-3-ethoxybutene-1. From 24.4 g V and sodium malonate ester (from 4.6 g Na and 32 g malonic ester in 80 ml absolute alcohol) is obtained (boiling 3 hours) the ethyl ester of 5,5-dichloro-

Card 10/14

- 12 -

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

-3-methyl-2-carbethoxypentene-4-ic acid (XXIII), yield 70%, BP 107°/1 mm, n^{20}_D 1.4605, d_4^{20} 1.1829. 20.7 g XXIII are hydrolyzed (by boiling with HCl and CH_3COCH_3) and decarboxylated to 5,5-dichloro-3-methylpentene-4-ic acid, yield 85.7%, BP 102°/1 mm, n^{20}_D 1.4800, d_4^{20} 1.2739. By interaction of 10 g V, 1.2 g AlCl_3 and 25 ml C_6H_6 (stirred 30 minutes) is obtained XII, yield 70%, BP 73-74°/1.5 mm, n^{20}_D 1.5423, d_4^{20} 1.1702. On action of Cl_2 XII forms 1,1,1,2-tetrachloro-3-phenylbutane, BP 107-108°/1.5 mm, n^{20}_D 1.5568, d_4^{20} 1.3634. From 36 g IX and 36.5 g $(\text{C}_2\text{H}_5)_2\text{NH}$ (~ 1000 , 16 hours) are obtained XXI, yield 13.8 g, BP 84-87°/21 mm, and 20.6 g IX. Interaction of 15 g VI and 5.5 g KOH in 25 ml absolute $\text{C}_2\text{H}_5\text{OH}$ (15-20°, 16 hours) gives 1,1-dichloro-3-ethoxy-3-phenylpropene-1 (XXIV), yield 87%, BP 90-91°/1 mm, n^{20}_D 1.5308, d_4^{20} 1.1822. From 11 g VI and 12 g

Card 11/14

- 13 -

USSR/Organic Chemistry - Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

$(C_2H_5)_2NH$ in 25 ml absolut C_2H_5CH (heating 8 hours) are obtained XXIV, yield 4.5 g, and 1,1-dichloro-3-diethylamino-3-phenylpropene-1, yield 4.8 g, BP 98-99°/1 mm, $n^{20}D$ 1.5335, d_4^{20} 1.1116; hydrochloride MP 149-150° (from alcohol-petroleum ether). From 11 g VI, 3 g $AlCl_3$ and 20 ml C_6H_6 is synthesized XIII, yield 76%, BP 142-143°/1 mm, $n^{20}D$ 1.5951, d_4^{20} 1.2180. By interaction of 17 g VII and 8.5 g KOH in 40 ml CH_3OH (15-20°, 16 hours) are obtained a small amount of XV and XVII, yield 82%, BP 47-48°/7 mm. Interaction of 10 g VII and 16 g $(C_2H_5)_2NH$ in 30 ml CH_3OH (heated 10 hours) gives XV and XVII, yield 77%. BP 57-58°/14 mm. From 10 g VII and 5 g NH_3 in 40 ml absolute alcohol (in ampoule, 90-95°, 4 hours) is obtained XVIII, with a yield of 6 g, and 1,1-dichloro-3-amino-3-methylbutene-1, yield 0.9 g, BP 64-65°/12 mm, $n^{20}D$

- 14 -

Card 12/14

USSR/Organic Chemistry .. Theoretical and General Questions
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

petroleum ether). From 10 g VII and 40 ml C_2H_5OH (15-20°, for several days) is obtained XVIII. Interaction of 10 g VIII and CH_3ONa (from 1.5 g Na in 50 ml CH_3OH) gives (on boiling for 30 hours) 1,1-dichloro-3-methoxy-4,4-di-methylpentene-1 (XXV), yield 50%, BP 60-61°/9 mm, n^{20}_{D} 1.4620, d^{20}_{40} 1.0755. From 7 g VIII and 5 c $(C_2H_5)_2NE$ in 15 g CH_3OH (~ 100°, 19 hours) is obtained XXV, yield 2.2 g.

Card 14/14

- 16 -

ZAKHARKIN, L.I.

MESMENYANOV, A.M., akademik; ZAKHARKIN, L.I.; FREYDLINA, R.Kh.

The condensation of γ,γ,γ -trichlorocrotonic acid, γ,γ -dichlorocrotonic acid and γ -bromocrotonic acid with benzene in the presence of aluminum chloride. Dokl. Akad. Nauk SSSR 111 no.1:114-116 N-D '56. (MLRA 10:2)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Crotonic acid. (Benzene)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4

ZAIHARKIN, L.I., FREYDLINA, R., NESMEYANOV, A.N., FREYDLINA, R.Ih., KOST, V.H.

AS USSR

"Homolytic Isomerisation in Polyhalogenalkenes," paper submitted
at 16th International Congress of Pure and Applied Chemistry, Paris,
18-24 July 1957

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

ZAKLARKIN, L. I., FREYDLINA, R. S., NESELEYANOV, A. N., VASILYeva, E. Y., PETROVA, R. G.,
and KARAPETYAN, S. A.

"Polymerization of ethylene with telomers and a new synthesis of amino acids," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Organic Chemistry Research Inst.

B-3,084,395

ZAKHARKIN, L.I.

62-11-7/29

AUTHORS:

Zakharkin, L.I., Korneva, V.V.

TITLE:

Allylic Rearrangements of 1,1-Dichloro-3-Phenylpropene-1
and Related Compounds (Allil'nyye peregruppirovki
1,1-dikhlor-3-fenilpropena-1 i blizkikh soyedineniy).PERIODICAL: Izvestiya AN SSSR, Otdelenie Khimicheskikh Nauk, 1957, Nr 11,
pp. 1344-1348 (USSR)

ABSTRACT:

Here it is demonstrated that under the influence of the sodium-alcoholate on 1,1-dichloro-3-phenylpropene-1 an allyl-prototrope rearrangement to 1,1-dichloro-3-phenylpropene-2 takes place. In a further reaction with the sodium-alcoholate diethylacetal of the cinnamaldehyde and the diethylketal of the phenylethinylketone develop. It is demonstrated that under the influence of the sodium-alcoholate on 1,1-dichloro-3-aetoxy-3-phenylpropene-1 the diethylketal of the phenylethinylketone is obtained. There are 12 references, 5 of which are Slavic.

ASSOCIATION: Institute for Elementorganic Compounds of the AN USSR.
(Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

ZAKHARKIN, L. I.

AUTHORS:

Zakharkin, L. I., and Okhlobystin, O. Yu. 20-2-20/50

TITLE:

The Utilization of Aluminum Trialkyls in the Synthesis of Elemental Organic Compounds (Ispol'zovaniye aluminiytrialkilov dlya sinteza elementoorganicheskikh soyedineniy).

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 116, Nr 2, pp. 236-238 (USSR)

ABSTRACT:

In connection with the fact that organoaluminum compounds were easily accessible in recent times the problem naturally rises of their utilization in the synthesis of other element-organic compounds. In patent publications production-methods were described of organozinc, organocadmium and organomercury compounds of the type $RMeX$, as well as of trialkylborines from haloid compounds of the same elements and from a mixture of alkylaluminum-halides which forms on the action of appropriate haloidalkyls on aluminum:

$3 RX + 2 Al \longrightarrow RAlX_2 + R_2AlX$. As far as this reaction only takes place with the lower alkyls (R not higher than C_3H_7), this method can not be considered general enough. In the present paper the authors studied the interaction of

Card 1/4

The Utilization of Aluminum Trialkyls in the Synthesis of
Element Organic Compounds 20-2-20/50

boron-, antimony-, arsenic-, phosphorus-, tin- and
mercury-halides with triethylaluminum and tri-isobutyl-
aluminum. In all cases investigated an exchange reaction
takes place under formation of an aluminum halide and of
alkyl derivatives of the elements taken. On addition of
trifluoroboro-ethydrate to tri-isobutyl-aluminum,
triisobutylboron forms at 60-65°C. The same forms on
blowing gaseous trifluoroboron through a triethylaluminum
solution in decahydronaphthalene. The interaction of tri-
isobutyl-aluminum-ethyrate with a suspension of trifluor-
antimony in ether takes place just as easily. The inter-
action of tri-isobutyl-aluminum with arsine trichloride
in ether does not lead to trialkylarsine; chief products
are, however: isobutyl-trichloroarsine and di-isobutyl-
chloroarsine. The interaction of tri-isobutyl-aluminum with
phosphorus trichloride is more complicated. The formation
of a complex of the reaction products with chloroaluminum
takes place as the result of an energetic reaction (in-
dependently of the type of solvent). From the reaction mass

Card 2/4

The Utilization of Aluminum Trialkyls in the Synthesis of
Elemental Organic Compounds

20-2-20/50

isobutyl dichlorophosphine can be distilled off in a vacuum. On further heating of the rest a radical decomposition takes place under formation of volatile products and elementary phosphorus. The interaction of equimolecular amounts of tri-isobutyl or tri-ethyl-aluminum with mercuric bromide or sublimate in ether or in hexane chiefly leads to symmetric dialkyl derivatives of mercury: a) Diiso-butyl-mercury and b) bromo-isobutyl-mercury. Diethyl-mercury was obtained from sublimate and triethylaluminum in hexane. Stannic tetrachloride yields tetra-isobutyl-tin on the action of tri-isobutyl-aluminum in heptane at 40-48°C (after decomposition by a NaOH-solution). Besides, tri-isobutyl-tin-oxide can be isolated by distillation of the rest over sodium, apparently by dehydration of the corresponding hydroxide. Thus $(\text{iso-C}_4\text{H}_9)_3\text{SnCl}$ and $(\text{iso-C}_4\text{H}_9)_3\text{SnO}$ form in the case of interaction of tri-isobutyl-aluminum and stannic tetrachloride. There are 14 references, 1 of which is Slavic.

Card 3/4

The Utilization of Aluminum Trialkyls in the Synthesis of
Elemental Organic Compounds

20-2-20/50

ASSOCIATION: Institute for Element Organic Compounds AN USSR
(Institut elementoorganicheskikh soyedineniy Akademii nauk
SSSR)

PRESENTED: By A. N. Nesmeyanov, Academician, May 8, 1957

SUBMITTED: May 7, 1957

AVAILABLE: Library of Congress

Card 4/4

Production of Aldehydes by Reduction of Nitriles With
Diisobutylaluminium Hydride.

20-3-20/46

attain 80 to 90% of the theoretically possible. The reaction concerned can be performed in various solvents (ether, benzol, heptane, a. o.), or without such solvents, what involves many advantages. According to the nature of the nitrile, temperatures from 0 to 40° were chosen. In the case of almost equimolar ratios of both participants in the reaction, nitriles were never reduced up to the amines. The decomposition of the transition product of the diisobutylaluminium hydride to the nitrile should be carried out with great precaution, especially in the case of such readily changeable aldehydes as phenylacetic acid aldehyde. The transition product of the $(i\text{-C}_4\text{H}_9)_2\text{AlH}$ to capronitryl cannot be distilled in 1 mm vacuum without decomposition. Reduced yields of phenylacetic aldehyde and of 1,1 dichlorhexen-1-Al-6 can be explained by the partial compaction ("uplotneniye") of these aldehydes. This can be remedied by the addition of 2,4 - dinitrophenylhydrazine, so that the yield of corresponding 2,4 dinitrophenylhydrazone comes to 80 and 72%. The above report is followed by an experimental part with the conventional data. There are 1 table, and 8 references, none of which are Slavic.

Card 2/3

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963520001-4"

Production of Aldehydes by Reduction of Nitriles With
Diisobutylaluminium Hydride.

20-3-20/46

ASSOCIATION: Institute of Elemental-Organic Compounds AN USSR (Institut elemento-organicheskikh soyedinenii Akademii nauk SSSR).

PRESENTED: May 8, 1957, by A. N. Nesmeyanov, Academician.

SUBMITTED: May 7, 1957.

AVAILABLE: Library of Congress.

Card 3/3

ZAKHARKIN, L. I.

AUTHORS:

Zakharkin, L. I., Gavrilenko, V. V., Okhlobystin, O. Yu. 62-1-18/29

TITLE:

The Action of Triethyl Aluminum and Diisobutyl Aluminum Hydride on Metal Chlorides of Group VI in the Presence of Carbon Monoxide
Synthesis of the Chromium, Molybdenum, and Tungsten Carbonyls
(Deyatviye triethylaluminija i diizobutilaluminijhdrida na khloridy metallov VI gruppy v prisutstvii okisi ugl'roda. Sintez karbonilov khroma, molibdena i vol'frama)

PERIODICAL:

Izvestiya AN SSSR, Otdeleniye Khimicheskikh Nauk, 1958
Nr 1, pp 100 - 102 (JSSR)

ABSTRACT:

The action of triethylaluminum and diisobutylaluminumhydride on the above mentioned chlorides was for the first time investigated by Jab and Cassal (reference 1). Both found, that carbonyles of chromium, molybdenum, and tungsten are formed in the reaction. Later this method was investigated by means of magnesium-organic compounds, i.e. indifferent variants. The authors show in this paper that for the obtaining of $\text{Cr}(\text{CO})_6$, $\text{Mo}(\text{CO})_6$ and $\text{Cr}(\text{CO})_6$ triethylaluminum and diisobutylaluminumchloride can be used with success, i.e. in carrying out the reaction of the chlorides of the metals of the 6th group with triethylaluminum in etheric solution. In the reaction under the same conditions with diisobutylaluminumhydride $\text{Cr}(\text{CO})_6$ and $\text{Mo}(\text{CO})_6$ were obtained (with a

Card 1/2

The Action of Triethyl Aluminum and Diisobutyl Aluminum Hydride on (p-1-10/29)
Metal Chlorides of Group VI in the Presence of Carbon Monoxide. Synthesis
of the Chromium-, Molybdenum-, and Tungsten Carbonyls

yield of 73 - 75%) The synthesis of the triethylaluminum and
triisobutylaluminum (of which diisobutylaluminumhydride was
produced) was carried out by the authors corresponding to the
reaction of Ziegler, Gellert, Zosel (reference 5) from aluminum,
hydrogen, and the corresponding olefin. There are 5 references.

ASSOCIATION: Institute of Elemental-Organic Compounds, AS USSR (Institut
elementoorganicheskikh soyedineniy Akademii nauk SSSR).

SUBMITTED: July 12, 1957

AVAILABLE: Library of Congress
1. Triethylaluminum-Synthesis 2. Triisobutylaluminum-Synthesis
3. Chromium carbonyl-Synthesis 4. Molybdenum carbonyl-Synthesis
5. Tungsten carbonyl-Synthesis 6. Diisobutylaluminumhydride-
Production ". Metal chlorides-Chemical reactions
8. Triethylaluminum-Chemical reactions 9. Diisobutylaluminumhydride-
Chemical reactions 10. Carbon monoxide-Applications

Card 2/2

AUTHORS:

Zakharkin, L. I., Okhlobystin, O. Yu.

SOV/62-58-10-21/25

TITLE:

Regrouping of Aluminum Trialkyls (Peregruppirovka alyuminiy-trialkilor)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1958, Nr 10, pp 1278 - 1278 (USSR)

ABSTRACT:

The authors found by the example of triisopropyl aluminum and tri-sec.-butyl aluminum that secondary aluminum trialkyls regroup into primary aluminum trialkyls on heating. The described method of the production of triisopropyl aluminum from $(i\text{-C}_3\text{H}_7)_2\text{Hg}$ and Al does not only yield triisopropyl aluminum, as the authors suggested (Ref 1), but also the mixture of triisopropyl aluminum and tripropyl aluminum which can be separated by fractionation. The triisopropyl aluminum produced in this way can be completely converted to tripropyl aluminum in a sealed ampoule. Tri-sec.-butyl aluminum produced in the reaction $(\text{sec. C}_4\text{H}_9)_2\text{Hg}$ with aluminum can be converted under the same conditions by regrouping into

Card 1/2

SOV/62-58-10-21/25

Regrouping of Aluminum Trialkyls

tri-n.butyl aluminum. In this case β -butylene and di-n. butyl aluminum hydride could partly form. Tri-n. butyl aluminum could be identified by means of n.butyl mercury bromide; boiling point 136°. There is 1 reference.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elementary Organic Compounds AS USSR)

SUBMITTED: June 6, 1958

Card 2/2

SOV/62-58-12-7/22

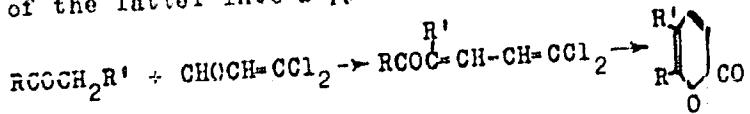
5(3)
AUTHORS:

Zakharkin, L. I., Sorokina, L. P.

TITLE:

Condensation of β,β -Dichloro Acrolein With Carbonyl Compounds and the Conversion of Condensation Products Into α -Pyrone Derivatives (Kondensatsiya β,β -dikhlorakroleina s karbonil'nyimi soyedineniyami i prevrashcheniye produktov kondensatsii v proizvodnyye α -pirona)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1445-1451 (USSR)

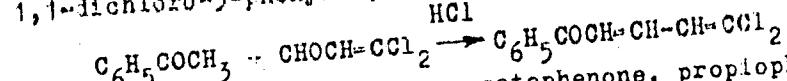
ABSTRACT: In the present paper the authors investigated the condensation of β,β -dichloro acrolein with some carbonyl compounds, which leads to the production of dichloro diene ketones. Besides, they investigated the possibility of a closing of the cycle of the latter into α -pyrone derivatives:With aliphatic aromatic ketones the reaction with β,β -dichloro

Card 1/3

SOV/62-5B-12-7/22

Condensation of β,β -Dichloro Acrolein With Carbonyl Compounds and the
Conversion of Condensation Products Into α -Pyrone Derivatives

acrolein in the presence of hydrogen chloride takes place
easily. Thus, acetophenone with β,β -dichloro acrolein yields
 $1,1$ -dichloro-5-phenyl-1,3-pentadiene-5-^{on}:

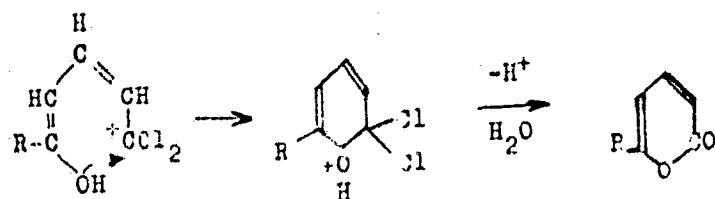
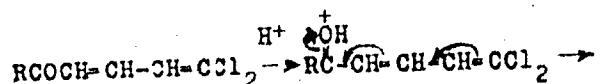


p-chloro-acetophenone, p-oxy-acetophenone, propiophenone and
n-butyrophenone react in a similar way. With respect to the
mechanism of the closure of the cycle of the dichloro penta-
diene system into an α -pyrone system the following consider-
ations may be made: It may be assumed that in acid medium
originally a hydrolysis takes place of the dichlorovinyl group
into a carboxyl group with a subsequent closure of the cycle
of the formed keto acids. In this case an addition of the
proton to the CCl_2-CH -group takes place. The assumption, how-
ever, that the proton affiliates to the end of the conjugated
system, i.e. to the carbonyl oxygen, seems more probable. The
process of cyclization can then be represented as follows:

Card 2/3

SOV/62-58-12-7/22

Condensation of β,β -Dichloro Acrolein With Carbonyl Compounds and the
Conversion of Condensation Products Into α -Pyrone Derivatives



There are 4 references, 1 of which is Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elementorganic Compounds, Academy of Sciences,
USSR)

SUBMITTED: April 5, 1957

Card 3/3

ZAKHARKIN, L.I.; GAVRILENKO, V.V.

Action of carbon dioxide on aluminum trialkyls. Dokl. AN SSSR.
(MIRA 11:4)
118 no.4:713-715 F '58.

1. Institut elemento-organicheskikh soyedineniy Akademii nauk SSSR.
Predstavleno akademikom A.N. Nesmeyanovym.
(Aluminum organic compounds)
(Carbon dioxide)
(Acids)

SOV/62-59-1-29/38

5(3)
AUTHORS:

Zakharkin, L. I., Gavrilenko, V. V.

TITLE:

Interaction of Halogens With Aluminum Trialkyls (Vzaimodeyst-
viye galoidov s aluminiytrialkilami)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 1, pp 166 - 168 (USSR)

ABSTRACT:

In the present communication the authors report on the investigation of the effect of chlorine, bromine, iodide on a number of aluminum trialkyls. Aluminum trialkyls react very strongly with halogens without solvent even at low temperatures (down to -78°). The effect of chlorine was investigated with triisobutyl aluminum, tri-n-butyl aluminum, tripropyl aluminum and tri-n-hexyl aluminum. Thus isobutyl chloride, 1-chloro butane, 1-chloro propane and 1-chloro hexane were obtained accordingly. The chlorination was carried out at -35 and -20°. The yield of alkyl chlorides amounted to 60-70%. Besides monochlorine derivatives also higher chlorine derivatives were obtained, especially at an excess of chlorine. In addition to that, the aluminum trialkyl mixture synthesized from triethyl aluminum and

Card 1 / 2

Interaction of Halogens With Aluminum Trialkyls

SOV/62-19-1-29/58

ethylene was chlorinated. 1-chloro butane, 1-chloro hexane and 1-chloro octane were separated therein. The reaction with bromine was investigated with triisobutyl aluminum, tri-n-butyl aluminum, tripropyl aluminum and tri-n-hexyl aluminum. At -20 and -25° only 2/3 of the theoretically required bromine quantity reacted. The yield of alkyl bromides amounted to 60-70%. By the action of bromine on the reaction product of trimethyl aluminum and isobutylene neopentyl bromide was precipitated in addition to methyl bromide. The effect of iodide was investigated with triethyl- and triisobutyl aluminum. The yield of alkyl iodides amounted to ~ 60%. Under given conditions isomerization of halide alkyls was not observed in one of the cases investigated. There are 5 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: June 6, 1958

Card 2/2

5(3)

SOV/62-59-1-37/38

AUTHORS:

Zakharkin, L. I., Okhlobystin, O. Yu.

TITLE:

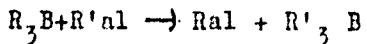
On the Reaction of Realkylation in the Aluminum and Boron
Trialkyl Series (O reaktsii perealkilirovaniya v ryadu
alyuminiy- i bortrialkilov)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 1, pp 181 - 181 (USSR)

ABSTRACT:

The authors write in a letter to the editor: On heating tri-alkyl or triaryl boron R_3B with trialkyl aluminum R'_3Al a reaction of realkylation occurs. Thus R'_3B , R_3Al and products of incomplete realkylation of initial trialkyl aluminum are formed:



al = 1/3 Al; R = n-C₄H₉; 1-C₄H₉, C₆H₅; R' = CH₃, C₂H₅.

Because of the high reaction temperature (120-180°) the olefin is separated from the R_3Al formed in some cases to a considerable degree. Consequently corresponding dialkyl

Card 1/3

On the Reaction of Realkylation in the Aluminum and Boron SOV/62-59-1-37/38
Trialkyl Series

aluminum hydrides are produced. In the interaction of triisobutyl boron with triethyl aluminum, for instance, triethyl boron and diisobutyl aluminum hydride were obtained. On gradual heating (up to 180°) of the mixture of triphenyl boron with a double quantity of triethyl aluminum triethyl boron is slowly distilled in pure nitrogen current. After the distillation of the mixture $(C_2H_5)_2AlC_6H_5$ and $C_2H_5Al(C_6H_5)_2$ in vacuum triphenyl aluminum remains in the residue. Under equal conditions, trimethyl boron is synthesized from $(C_6H_5)_3B$ and $(CH_3)_3Al$ with a yield of 75%. Trimethyl boron is slowly separated on heating the mixture of trimethyl aluminum and tributyl boron up to the boiling point. The tributyl aluminum being produced contains up to 25% dibutyl aluminum hydride. In the interaction of tributyl boron with triethyl aluminum triethyl boron and also a mixture of tributyl aluminum and dibutyl aluminum hydride is formed which contains 50% of the latter.

Card 2/3

On the Reaction of Realkylation in the Aluminum and Boron ZOV/62-59-1-37/38
Trialkyl Series

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk
SSSR(Institute of Elemental Organic Compounds of the Academy
of Sciences, USSR)

SUBMITTED: September 9, 1958

Card 3/3

5(3)

AUTHOR:

Zakharkin, L. I.

SOV/62-5^3-9/37

TITLE: Reaction Between 1,1-Dichlorohexene-1 and Sodium Ethyl Mercaptide (Deystviye etilmekaptida natriya na 1,1-dikhlororgeksen-1)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 437-443 (USSR)

ABSTRACT: In the present paper the action exerted by sodium ethyl mercaptide on 1,1-dichlorohexene-1 as well as on 1,2-dichlorohexene-1 and 1-chlorohexene-1 was investigated. On the heating of an alcoholic solution of sodium ethyl mercaptide with 1,1-dichlorohexene-1 2 compounds were obtained: 1-chloro-2-ethyl mercapto hexene-1 and 1,2-bis-(ethyl mercapto)-hexene-1. The same products were likewise obtained from 1,2-dichlorohexene-1 and 1-chlorohexene-1 under the action of ethyl mercaptide. Investigating the structure of these two compounds the following was found: On the action of 2,4-dinitro-phenyl hydrazine in the presence of sulphuric acid always the same 2,4-dinitro-phenyl hydrazone $C_{14}H_{20}N_4O_4S$ is formed. On the heating of solutions of 1-chloro-2-ethyl mercapto hexene-1 and 1,2-bis-(ethyl mercapto)-hexene-1 in hydrochloric and acetic acid

Card 1/3

Reaction Between 1,1-Dichlorohexene-1 and Sodium Ethyl Mercaptide

SOV/62-59-3-9/37

mixture always the same 1-ethyl mercapto hexene-2 results. This yields the 2,4-dinitro-phenyl hydrazone which is identical with the 2,4-dinitro-phenyl hydrazone directly obtained from 1-chloro-2-ethyl mercapto hexene-1 and 1,2-bis-(ethyl mercapto)-hexene-1. As to the reaction of sodium ethyl mercaptide with 1,1-dichloro hexene-1 it may be assumed that the first reaction stage is the addition of C_2H_5SH to the dichloro vinyl group and the following separation of HCl. Apparently the separation of hydrogen chloride takes place more readily than the addition of ethyl mercaptane. Such an addition of ethyl mercaptane to the asymmetric dichloro vinyl group is in contradiction with the addition of a number of electrophilic reagents, if it proceeds by way of the addition of the $C_2H_5S^-$ -anion. In the case of an action exerted by nucleophilic reagents on the dichloro vinyl group an induction effect of the chlorine atoms seems to occur which produces a fractional positive charge at the second carbon atom. The action of the nucleophilic reagents is directed to this carbon atom. In the case of electrophilic reagents,

Card 2/3

Reaction Between 1,1-Dichlorohexene-1 and Sodium
'Ethyl Mercaptide

SOV/62-59-3-9/37

however, the determinative direction appears to be the electromeric effect of chlorine atoms. It is not impossible that the addition of ethyl mercaptane takes place according to a radical mechanism although the reaction in the presence of diphenyl amine in nitrogen atmosphere offers the same results. There are 10 references, 4 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: June 11, 1957

Card 3/3

5(3)
AUTHORS:

Zakharkin, L. I., Savina, L. A.

SOV/62-59-3-10/37

TITLE:

Effect of Triethyl Aluminum and Diisobutyl Aluminumhydride on
Some Allyl Compounds (Deystviye trietilalyumiiniya i diizo-
butilalyumiinygidrida na nekotoryye allil'nyye soyedineniya)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 3, pp 444-449 (USSR)

ABSTRACT:

In the present paper the effect of triethyl aluminum and diisobutyl aluminumhydride on allyl compounds $\text{CH}_2=\text{CH}-\text{CH}_2\text{X}$, X being OR , SR , and NR_2 , was investigated. A cleavage of the $\text{C}-\text{X}$ -bond takes place and an unsaturated hydrocarbon and corresponding $(\text{C}_2\text{H}_5)_2\text{AlX}$ are formed. The inability of triethyl aluminum to react with the double bond of the allyl compounds investigated may be explained by the decreasing electron density at the heteroatom owing to the complex bond that reduces the activity of the double bond. In contrast with the triethyl aluminum the addition of the diisobutyl aluminumhydride to the double bond takes place comparatively easily. $(\text{i-C}_4\text{H}_9)_2\text{-AlCH}_2\text{CH}_2\text{CH}_2\text{X}$ are formed herein, where $\text{X} = \text{OR}$, NR_2 ,

Card 1/2

Effect of Triethyl Aluminum and Diisobutyl Aluminum- SOV/62-59-3-10/37
hydride on Some Allyl Compounds

and SR. Further an attempt was made to allow the diisobutyl aluminumhydride to react with the double bond of the vinyl butyl ether. As a result of this reaction which proceeds with self-heating, ethylene (already at 30-35°) and butoxy diisobutyl aluminum were obtained. Apparently the organic aluminum compound of the $R_2Al-CH_2CH_2OR$ type, which is initially formed, is as unstable as similar organic magnesium compounds $XMgCH_2CH_2X$ (Refs 6,7). It decomposes, while ethylene is eliminated and alcoholate $(i-C_4H_9)_2AlH + CH_2=CH-OC_4H_9 \longrightarrow (i-C_4H_9)_2AlCH_2CH_2OC_4H_9 \longrightarrow (i-C_4H_9)_2AlOC_4H_9 + Cl_2=CH_2$ is formed. There are 12 references, 1 of which is Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: June 14, 1957
Card 2/2

5(3)

AUTHORS:

Zakharkin, L. I., Khorlina, I. M.

SOV/62-59-3-27/37

TITLE:

Thermal Decomposition of Adducts of Diisobutyl Aluminum Hydride on Nitriles (Termicheskoye razlozheniye produktov prisoyedineniya diizobutilalyuminiygidrida k nitrilam)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 550-552 (USSR)

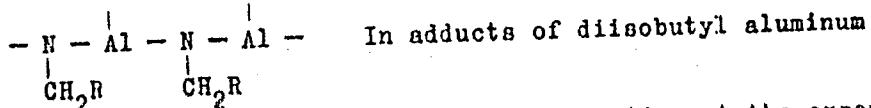
ABSTRACT:

In the preceding paper (Ref 1) the authors obtained the adducts of diisobutyl aluminum hydride and the nitriles $RCH=N - Al(i-C_4H_9)_2$. In the present paper the behavior of these products was investigated when they are heated. It was found that a gas consisting mainly of isobutylene is separated if the compounds $RCH=N - Al(i-C_4H_9)_2$ are heated to temperatures of from 220-240°. In the hydrolysis of the residue, however, the corresponding amine RCH_2NH_2 forms with a yield of up to 80 % of the theoretically computed value. Thus, in heating a reduction takes place due to the displacement of isobutylene and the formation of new Al-N bonds. In this reduction products of the following linkage systems form:

Card 1/2

Thermal Decomposition of Adducts of Diisobutyl
Aluminum Hydride on Nitriles

SOY/62-59-3-27/37



hydride and disubstituted amides a reduction at the expense of the displacement of isobutylene is possible in principle. It is, however, only unimportant and furthermore, is accompanied by strong resinification. There are 8 references, 1 of which is Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: July 16, 1958

Card 2/2

5(3)
AUTHORS:

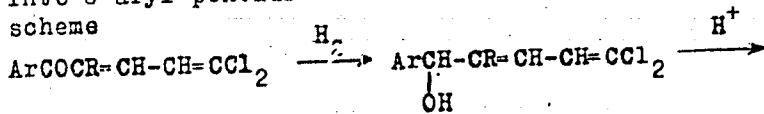
Zakharkin, L. I., Sorokina, L. P.

SOV/62-59-5-32/40

TITLE: Rearrangement of 1,1-Dichloro-5-oxy-(Chloro)-5-aryl penta-dienes-1,3 Into δ -Arylpentadiene Acids (Peregruppirovka 1,1-dikhlor-5-oksi (khlor)-5-aryl pentadienov-1,3 v δ -aryl pentadienovyye kisloty)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 5, pp 936-938 (USSR)

ABSTRACT: In the present paper the reduction of some 1,1-dichloro-5-oxo-5-phenyl pentadienes-1,3 into the corresponding oxide derivatives was carried out, and the allyl-anionotropic isomerization into δ -aryl pentadiene acid was investigated according to the scheme



ArCH=CR-CH=CH-COOH. Such a re-grouping in pentadienes has hitherto not been investigated. The reduction of the following diene ketones was carried out with aluminum isopropylate in isopropyl alcohol: ArCOCR=CH-CH=CCl₂ with 1) Ar = C₆H₅, R = H;

Card 1/2

507/62-59-5-32/40

Rearrangement of 1,1-Dichloro-5-oxy (Chloro)-5-arylpentadiene-1,3 Into
5-Arylpentadiene Acids

2) Ar = C_6H_5 , R = CH_3 ; 3) Ar-p-Cl C_6H_4 , R = H. Of these three
oxide derivatives obtained only 1,1-dichloro-5-oxy-4-methyl-5-
phenylpentadiene-1,3 showed sufficient resistance to heat, so
that it could be distilled without being changed. The other
two alcohols had to be converted into the corresponding
chlorides for the purpose of vacuum distillation. In the ex-
perimental the individual reactions are described and the
physical characteristics of the substances obtained are given.
There are 5 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institut of Elemental-organic Compounds of the Academy of
Sciences, USSR)

SUBMITTED: October 24, 1958

Card 2/2

5 (3)

AUTHORS:

Zekharkin, L. I., Gavrilenko, V. V.

SOV/62-59-8-39/42

TITLE:

Anomalous Reaction Course in the Displacement of Isobutylene
by Means of Styrene From Triisobutylaluminum

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr. 8, p 1507 (USSR)

ABSTRACT:

In the displacement reaction of triisobutylaluminum and styrene
an affiliation of aluminum to both the first and second carbon
atom could be observed contrary to Ziegler's statements (Refs 1, 2).
The two isomers were obtained in a ratio $\sim 7:3$. The following
equation is given for the reaction: $C_6H_5CH=CH_2 + i-C_4H_9Al \rightarrow$
 $\rightarrow C_6H_5CH-Al + C_6H_5CH_2CH_2Al + i-C_4H_8$, al = $1/3$ Al. After the

oxidation of the obtained mixture with chromic anhydride in
acetic acid, acetophenone and phenyl acetic acid were
precipitated under the influence of carbon dioxide-ethylbenzoic
and cinnamic acid. Similar results were obtained in the
investigation of the affiliation of diisobutylaluminum to
styrene. There are 2 references.

Card 1/2

Anomalous Reaction Course in the Displacement of
Isobutylene by Means of Styrene From Triisobutylaluminum

SOV/62-59-8-39/42

ASSOCIATION: Institut elementorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds, Academy of Sciences,
USSR)

SUBMITTED: May 22, 1959

Card 2/2

5.3610

77071
SOV/62-59-12-15/43

AUTHORS:

Zakharkin, L. I., Khorlina, I. M.

TITLE:

Reduction of Substituted Amides to Aldehydes and
Amines With Diisobutylaluminum Hydride

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdelenie khimicheskikh
nauk, 1959, Nr 12, pp. 2145-2150 (USSR)

ABSTRACT:

Dialkylamides of aliphatic acids and amides of aromatic
acids are reduced with diisobutylaluminum hydride. The
yields of aldehydes are given in Table 1. The yields
of amines obtained by reduction of mono- and disubsti-
tuted amides with $(iso-C_4H_9)_2AlH$ are given in Table 2.

Card 1/5

Reduction of Substituted Amides to
Aldehydes and Amines With Diisobutylaluminum
Hydride

77071
SOV/62-59-12-15/43

REDUCTION TO ALDEHYDES

(TEMP 0°; RATIO AMIDE TO HYDRIDE 1:1.5)

TABLE 1

AMIDES	YIELD OF ALDE- HYDES (%)	mp of 2,4-di,i-propenyl- hydrazones in °C	FOUND	ACC. TO LITERATURE
1 ETHYLANILIDE OF BUTYRIC ACID	1 58	122	122	
2 DIMETHYLANILIDE OF ISOCAPRIC ACID	2 25	117	116-117	
3 ETHYLANILIDE OF ISO-VALERIC ACID	3 52	117	116-117	
4 DIMETHYLANILIDE OF ENANTHIC ACID	4 30	106.5-107	107	
5 ETHYLANILIDE OF ENANTHIC ACID	5 30	106.5-107	107	
6 DIMETHYLANILIDE OF CAPRYLIC ACID	6 26	100	103	
7 METHYLANILIDE OF CAPRYLIC ACID	7 50	100	103	
8 ETHYLANILIDE OF CAPRYLIC ACID	8 52	106	103	
9 DIMETHYLANILIDE OF BENZOIC ACID	9 44	236-237	233	
10 METHYLANILIDE OF BENZOIC ACID	10 48	236-237	233	
11 METHYLANILIDE OF BENZOIC ACID	11 67	236-237	233	
12 ETHYLANILIDE OF BENZOIC ACID	12 70	236-247	238	
13 DIMETHYLANILIDE OF NICOTINIC ACID	13 44	239.5	239	
14 METHYLANILIDE OF AZELIC ACID	14 53	131-142		
15 METHYLANILIDE OF 6-PHTHALIC ACID	15 60	280	280	
16 ETHYLANILIDE OF OLEIC ACID	16 58	67	67-68	
17 ETHYLANILIDE OF 6-AROMOBENZOIC ACID	17 30	190-199.5	200	
18 ETHYLANILIDE OF ANISIC ACID	18 60	254	254	
19 METHYLANILIDE OF PHENYLACETIC ACID	19 50	110	110	

Card 2/5

Reduction of Substituted Amides to
Aldehydes and Amines With Diisobutylaluminum
Hydride

77071
SOV/62-59-12-15/43

TABLE 2

REDUCTION OF AMIDES TO AMINES

AMIDE	RATIO OF AMIDE TO (iso- Bu) ₂ AlH	YIELD OF AMINE (%)	mp. OF DERIVATIVES in °C	
			FOUND	cc. to LITERATURE
1. DIETHYL BENZAMIDE	1 : 2.2	75	120 a)	120
2. "	1 : 2.5	70	120	120
3. "	1 : 3	91	120	120
4. DIMETHYLBENZAMIDE	1 : 3	93	175	175
5. DIETHYLAACIDE OF ACETIC ACID	1 : 3	90	184,5 b)	185
6. DIETHYAMIDE OF ISOVALERIC ACID	1 : 2.5	80	132 a)	132
7. "	1 : 3	95	132	132
8. DIMETHYLAACIDE OF ENANTHIC ACID	1 : 3	91	83 a)	83
9. DIETHYLAACIDE OF CAPROIC ACID	1 : 3	93	65 a)	62-65
10. CAPROLACTAM	1 : 4	95	145 a)	146
11. ISOBORNYLBENZAMIDE	1 : 4	95	c)	*

a -- picrate; b -- dihydrochloride; c -- hydrochloride

* Found for isobornylbenzylamine: Cl 12.47

Card 3/5

Reduction of Substituted Amides to
Aldehydes and Amines With Diisobutylaluminum
Hydride

77071
SOV/62-59-12-15/43

The reduction of disubstituted amides to aldehydes
occurs as follows:

$$\text{RCONR}_1\text{R}_2 + (\text{i-C}_4\text{H}_9)_2\text{AlH} \rightarrow \text{R}-\underset{\substack{| \\ \text{OAl}(\text{i-C}_4\text{H}_9)_2}}{\text{CH}}-\text{NR}_1\text{R}_2 \xrightarrow{\text{H}_2\text{O}} \text{RCHO}.$$

(I)

The reduction of amides to amines occurs according to
scheme:

$$(I) + (\text{i-C}_4\text{H}_9)_2\text{AlH} \rightarrow \text{RCH}_2\text{NR}_1\text{R}_2 + (\text{i-C}_4\text{H}_9)_2\text{AlOAl}(\text{i-C}_4\text{H}_9)_2$$

(II)

There are 5 tables; and 21 references, 1 Soviet,
5 German, 3 French, 5 U.S., 7 U.K. The 5 most recent
U.S. and U.K. references are: V. M. Micovic, M. L.
Mihailovic, J. Org. Chem., 18, 1190 (1953); O. D.
Johnson, J. Am. Chem. Soc., 48, 7543 (1954); E. A.
Braude, R. U. Jones, J. Chem. Soc., 498 (1943);
J. D. Roberts, Ch. Green, J. Am. Chem. Soc., 68, 214
(1946); R. E. Benson, F. L. Cairus, J. Am. Chem. Soc.
70, 2115 (1948).

Card 4/5

Reduction of Substituted Amides to 77071
Aldehydes and Amines With Diisobutylaluminum SOV/62-59-12-15/43
Hydride

ASSOCIATION: Institute of Elementoorganic Compounds, Academy of
Sciences USSR (Institut elementoorganicheskikh
soedineniy, Akademii nauk SSSR)

SUBMITTED: April 18, 1958

Card 5/5

ZAKHARKIN, I. M.

5.3400

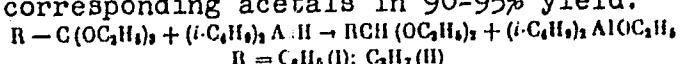
77096
SOV/62-59-12-40/43

AUTHORS: Zakharkin, L. I., I. M. Khorlina

TITLE: Hydrogenolysis of C-O Bond in Ortho-Esters, Acetals,
and Some Ethers by the Action of Diisobutylaluminum
Hydride. Brief Communications

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1959, Nr 12, pp 2255-2257 (USSR)

ABSTRACT: The C-O bond in ortho-esters (I) and (II) was easily
hydrogenolized on heating at 30° with diisobutyl-
aluminum hydride in dry benzene. The reaction gave
the corresponding acetals in 90-95% yield.

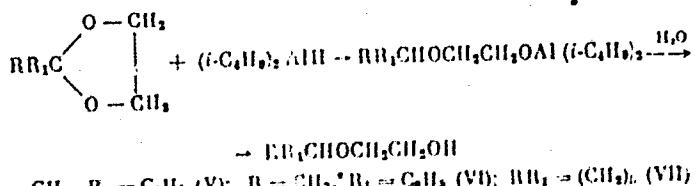
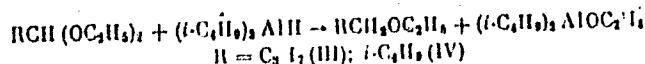


Diisobutylaluminum hydride also easily hydrogenolized
(at 70-80°) diacetals (III) and (IV) as well as ketals
(V), (VI), and (VII), giving the corresponding ethers
in 80-90% yield:

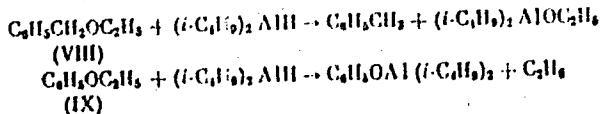
Card 1/3

Hydrogenolysis of C-O Bond in Ortho-Esters,
Acetals, and Some Ethers by the Action of
Diisobutylaluminum Hydride. Brief Communications

77096
sov/62-59-12-40/43



It was also shown that the ether bond was easily hydrogenolized by diisobutylaluminum hydride on heating at 120-140°. Ethyl benzyl ether (VIII) and ethyl phenyl ether (IX) gave toluene and ethane, respectively, in 87-92% yield.



Card 2/3

Hydrogenolysis of C—O Bond in Ortho-Esters, 77096
Acetals, and Some Ethers by the Action of SOV/62-59-12-40/43
Diisobutylaluminum Hydride. Brief Communications

Diisobutylaluminum hydride can be used, therefore, in cases where lithium aluminum hydride was ineffective, as in hydrogenolysis of acetals, ketals, and ethers. There are 14 references, 9 U.S., 1 U.K., 1 French, 3 German. The 5 most recent U.S. and U.K. references are: B. R. Brown, C. A. Somerfield, Proc. Chem. Soc., 1958, 7; E. L. Ellel, M. Rerick, J. Org. Chem., 23, 1088 (1958); W. E. Parham, H. Wynberg, F. L. Pamp, J. Amer. Chem. Soc., 75, 2065 (1953); W. Oroshnik, A. D. Mebane, G. Karmas, *ibid.*, 75, 1053 (1953); H. M. Denkas, T. D. Fontaine, *ibid.*, 75, 5355 (1953).

ASSOCIATION: Institute of Element-Organic Compounds, Academy of Sciences, USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: May 22, 1959

Card 3/3

5 (3)

AUTHORS:

Samokhvalov, G. I., Zakharkin, L. I., Sov/20-126-5-28/69
Davydova, L. P., Khorlinia, I. M.

TITLE:

A New Synthesis of β -Ionolidenacetic Aldehyde (Novyy sintez
 β -ionolidenukususnogo al'degida)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1013 - 1016
(USSR)

ABSTRACT:

"9,13 dimethyl-7-(1,1,5 trimethyl-cyclohexene-5-yl)-octatriene 8,10,12 al 14; aldehyd C₁₉ (I)" is an intermediate product of the β -carotene synthesis (Ref 1). The extension of the carbon chain of this compound by one atom and the creation of a conjugate system of double bonds renders the transition to stereo-isomeric retinal aldehydes possible, which corresponds to the vitamin A. The above mentioned chain-extension is based on the formation of cyanohydrins (Refs 2,3). For the reduction of the nitriles, arising after the dehydration, di-isobutyl-aluminum hydride (Ref 4) could be used. The authors describe a realisation of this method with reference to a simple example: The synthesis mentioned in the title (Ref 5) of 7-(1,1,5 trimethyl-cyclohexene-5-yl)-9-methyl butene-8-al-10 of β -C₁₄ al-

Card 1/3

A New Synthesis of β -Ionolidenacetic Aldehyde

SOV/20-126-5-28/69

dehyde (II) (see scheme). The interaction between aldehyde C₁₄ (II) with acetone-cyanhydrine takes place under the influence of a methanol solution of potash at 20-23°. The oxy-nitrile yield (III) amounts to 83-84%. By the reduction of the nitrile- β -ionolide-acetic-acid (Fig 1) (IV) the substance mentioned in the title (V) was produced as a stereo-isomeric mixture, and was isolated. In the crystallization of the semi-carbazones of the stereo-isomeric-aldehydes from alcohol trans- β -ionolide acetic aldehyde semi-carbazone was obtained (melting point 195.5°-196° Refs 7,8), and a far smaller quantity of the cis-isomers (melting point 173-174°). A far-reaching agreement of the maxima of the ultra-violet absorption spectra of the carbazones of the isomeric aldehydes (Fig 2) allows the conclusion that the isomery is caused by a deviation of the position of the substituents with regard to the newly formed, sterically not impeded, double-bond of the carbon atoms 9-10. Out of the carbazole of the trans- β -ionolide-acetic aldehyde free aldehyde was obtained. The infrared spectrum (Fig 3) is characteristic of substances with a trans-position of the substituents at the double bond. Bands in the range of 6.25 μ belong to the

Card 2/3

A New Synthesis of β -Ionolidenacetic Aldehyde

SOV/20-126-5-28/69

oscillations of the system of conjugate double bonds, whilst those at 6μ correspond to the γ -oscillation C=O in the system with conjugate unsaturated bonds. Prof. N. A. Preobrazhenskiy showed interest in this investigation. There are 3 figures and 8 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut (All-Union Scientific Vitamin Research Institute). Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

PRESENTED: March 11, 1959, by M. I. Kabachnik, Academician

SUBMITTED: March 9, 1959

Card 3/3

ZAKHARKIN, L.I.; SAVINA, L.A.

Preparation and properties of some inner-complex organoaluminum
compounds. Izv.AN SSSR.Otd.khim.nauk no.6:1039-1(4) Jl '60.
(MIRA 13:7)

1. Institut elementoorganicheskikh soyedineniy Akademii
nauk SSSR.
(Aluminum organic compounds)